

REMARKS

Applicant hereby responds to the Office Action mailed January 22, 2007 in relation to the above-identified patent application. In that Office Action, the Examiner rejected Claims 1-3, 5-9, 11-13 and 15-20 under 35 U.S.C. §103(a) as being unpatentable over the Hirasawa et al. reference, and rejected Claims 1-3, 5-8, 11-13, 15-18 and 20 under Section 103(a) as being unpatentable over the Okuaki reference. In addition, the Examiner rejected Claims 1-9 and 11-20 under Section 103(a) as being unpatentable over the Miks et al. reference, considered in combination with one or more of the Kanatake, Bolken, Kawai et al., and Glenn et al. references.

Applicant respectfully submits that Claims 1-20 of the present application, in their current form, are each allowable over the cited prior art references of record for the reasons set forth below.

Claims 1-9 and 11-20 are not Rendered Obvious under 35 U.S.C. § 103(a) by the Miks et al. Reference Considered in Combination with One or More of the Kanatake, Bolken, Kawai et al. and Glenn et al. References

As indicated on the face of the Miks et al. reference (U.S. Patent No. 6,910,635) cited by the Examiner as the primary reference in support of various Section 103(a) rejections presented in relation to the Claims 1-9 and 11-20, such reference issued on June 28, 2005, based on an application filed on October 8, 2002. As further indicated on the face of the cited Miks et al. reference, the same is wholly owned by the assignee of the present application, i.e., Amkor Technology, Inc.

Applicant notes that in the subject Office Action, the Examiner has not provided any specific prior art characterization for the cited Miks et al. reference. As indicated above, the cited Miks et al. reference issued on June 28, 2005 which is over fourteen (14) months subsequent to the April 15, 2004 filing date related to the present application. As such, the cited Miks et al. reference does not qualify as prior art under 35 U.S.C. §102(b) since the issuance date thereof is not more than one year prior to the aforementioned priority date related to the present application. To the extent that the Miks et al. reference is deemed to be

prior art under 35 U.S.C. §102(e), Applicant respectfully submits that the provisions of 35 U.S.C. §103(c)(1) effectively eliminate such reference as prior art in support of those outstanding Section 103 rejections of the pending claims which are based thereon.

Thus, based on the foregoing, to the extent that the cited Miks et al. reference is still deemed by the Examiner to constitute valid prior art in support of the outstanding rejections of the pending claims, Applicant respectfully requests that the Examiner identify the basis under which such reference is deemed to be prior art.

Independent Claims 1 and 11 are not Rendered Obvious under 35 U.S.C. § 103(a) by either the Hirasawa et al. Reference or the Okuaki Reference

In the Office Action, the Examiner argues that the Hirasawa et al. and Okuaki references each, standing alone, render obvious the memory card fabrication methodologies set forth in independent Claims 1 and 11 of the present application. The Examiner appears to recognize that both the Hirasawa et al. and Okuaki references are directed to ***semiconductor devices*** rather than to ***memory cards***, but nonetheless concludes that there is no basis for the differentiation between method claims drawn to memory card fabrication and semiconductor device prior art. Applicant respectfully submits that this conclusion is in error.

It is well-settled that, “[i]n order to rely on a reference as a basis for rejection of an applicant’s invention, the reference must either be in the field of applicant’s endeavor or, if not, then be reasonably pertinent to the particular problem with which the inventor was concerned.” MPEP 2141.01(a) citing *In Re Oetiker*, 977 F.2d 1443, 1446. (Fed. Cir. 1992). Further, a reference is reasonably pertinent if “it is one which, because of the matter with which it deals, logically would have commended itself to an inventor’s attention...” MPEP 2141.01(a) citing *In Re Clay*, 966 F.2d 656 (Fed. Cir. 1992).

Appellant respectfully submits that the Examiner’s basis for the rejections of independent Claims 1 and 11 is in error since both the Hirasawa et al. and Okuaki references are directed to *semiconductor devices*, while the present invention is directed to a method of fabricating a *memory card*. In this regard, there are numerous differences between

semiconductor devices or packages and memory cards, such differences rising to the level of making semiconductor package art non-analogous to the field of memory cards.

Generally, a semiconductor package is designed to be permanently attached to an underlying substrate such as a printed circuit board of an electronic device. A semiconductor package typically includes a semiconductor die attached to a die pad, both of which are encapsulated with a mold compound which forms a quadrangular package body. On the lower surface of the package body is an array of terminals which are electrically connected to the semiconductor die through the use of bond wires. After the semiconductor package is placed on the printed circuit board, a solder reflow process is typically completed to form a permanent mechanical and electrical connection between the semiconductor package terminals and corresponding terminals on such printed circuit board.

In contrast, a memory card is a modular cartridge that is designed to be frequently inserted in to and removed from a card reader socket on data processing devices. Generally, a memory card includes a printed circuit board with memory modules attached thereon, and may also include additional passive components. The body of the memory card conforms to one of the widely accepted standards for memory card devices, and encloses the aforementioned components. A significant design consideration in memory cards is durability. Memory cards must withstand forces from repeated insertion and removal cycles, as well as inadvertent drops onto hard surfaces. Additional design considerations include resistance to breakage resulting from bending or twisting forces to which memory cards are often subjected during normal usage.

Still further, as is explained in the specification of the present application, one of the drawbacks associated with leadframe based memory cards is that portions of the tie bars which are used to connect the contacts to the outer frame of the leadframe are typically exposed in the leading edge of the memory card which is initially advanced into the host socket. More particularly, exposed within this leading edge are the severed ends of the tie bars created as a result of the cutting or singulation process typically used to separate the outer frame of the leadframe from the remainder thereof subsequent to the formation of the body of the memory card. These exposed portions of the tie bars give rise to a potential to short against the metal features of the host socket, and are thus highly undesirable.

As is further explained in the specification of the present application, the fabrication methodology of the present invention addresses and overcomes the above-described deficiencies of currently known leadframe based memory cards by providing a two-step transfer mold procedure to form the memory card body which partially encapsulates the memory card leadframe structure so that the tie bars used to secure the contacts to the outer frame can be removed prior to the complete formation of the body. More particularly, in an initial step of the fabrication process, a first body section is molded to portions of the leadframe other than for the contacts thereof. This initial molding step is followed by a trimming procedure wherein the outer frame and tie bars used to connect the contacts thereto are removed from the leadframe. Thereafter, a second molding procedure is completed wherein a second body section is molded to the leadframe in a manner partially encapsulating the contacts thereof. Though a portion of each of the contacts is exposed in a common surface of the second body section, no metal is exposed in that surface of the second body section which defines the leading edge of the memory card.

Applicant respectfully submits that the Hirasawa et al. and Okuaki references are not in the same "field of endeavor" as the present invention, nor are such references "reasonably pertinent" to the particular problem with which the Appellant was concerned. Semiconductor package designs as those disclosed in the Hirasawa et al. and Okuaki references involve none of the considerations highlighted above which pertain to memory cards, and in particular those considerations which are specific to leadframe based memory cards. A person having ordinary skill in the art would therefore not be motivated to look to semiconductor package art to solve problems in the memory card art. For example, a semiconductor package would not be designed with considerations of eliminating bending and twisting forces potentially acting upon it. Nor would a semiconductor package be designed to eliminate exposed metal features in a leading edge thereof which could potentially create shorting hazards against the metal features of a host socket since they do not undergo repeated cycles of insertion or removal into a host socket, but rather are normally permanently soldered or otherwise attached to an underlying substrate such as a printed circuit board as indicated above. Therefore, since none of the major considerations related to memory card design are found in semiconductor package design, Appellant

respectfully submits that the Hirasawa et al. and Okuaki references would logically not have commended themselves to a memory card inventor's attention. Quite simply, the Hirasawa et al. and Okuaki references each concern a different problem having a different solution.

Thus, Appellant respectfully submits that the Hirasawa et al. and Okuaki references are devoid of any teaching or suggestion which would have led one of ordinary skill in the art to apply their semiconductor package design principles to a memory card under 35 U.S.C. Section 103(a). In this regard, since semiconductor packages and memory cards are subject to vastly differing design considerations attributable to the magnitude of the differences in their end uses and thus constitute divergent subject matter, it follows that one of ordinary skill in the art would not look to the Hirasawa et al. or Okuaki references (each directed to a semiconductor package) as a legitimate basis for an obviousness rejection of claims directed to fabrication methodologies for memory cards.

Thus Applicant respectfully submits that independent Claims 1 and 11 are not rendered obvious by either the Hirasawa et al. or Okuaki references, and are condition for allowance. Along these lines, Applicant respectfully submits that Claims 2-10 and 12-20 are also in condition for allowance at least for the reason that such claims are either directly or indirectly dependent upon respective allowable base claims.

Conclusion

On the basis of the foregoing, Applicant respectfully submits that the stated grounds of rejection have been overcome, and that Claims 1-20 are now in condition for allowance. In this regard, Applicant respectfully submits that it is entitled to the rejoinder of Claim 10 due to its dependency on an underlying generic claim. An early Notice of Allowance is therefore respectfully requested.

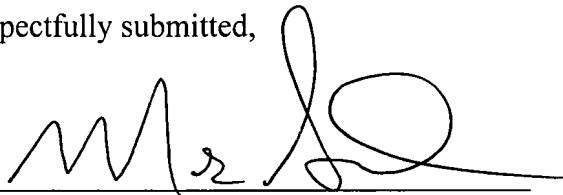
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